

TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. QUINAULT DRYDOCKING

CONTRACT NO. 00-7088

TECHNICAL SPECIFICATIONS

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WASHINGTON STATE FERRIES

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CONTRACT NO. 00-7088

TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. **DRYDOCK VESSEL**

{MAINTENANCE}

M.V. QUINAULT Vessel Particulars:

Length: 256'0", Beam: 73'-10", Draft: 12'-9", Gross Tons: 1,368.

- A. Drydock Vessel for cleaning, painting, inspections, the work specified herein and any necessary repairs.
- B. Block spacing shall be at twelve foot (12') centers. Within twenty-four (24) hours of Docking, provide three (3) copies of the block position drawing to the WSF Inspector indicating the block positions used.
- C. Vessel shall be blocked to expose the block positions used at the previous docking. **Attachment No. 2**, "BLOCK POSITION FORM" showing previous docking position, is provided for reference.

1 **2. TEMPORARY SERVICE**

2 {MAINTENANCE}

3 A. Install one (1) telephone on board in a location designated by the Vessel Staff
4 Chief Engineer. The telephone is to have one (1) outside line with toll-free
5 access to Seattle and vicinity and, if different, one (1) line for local numbers.
6 The telephone shall have touchtone service if available from the Contractor's
7 telephone system.

8 B. Provide and maintain electricity, water, safe lighted gangway and trash
9 removal services while Vessel is in the Contractor's facility.

10 C. Provide Safety and Security for the entire Vessel throughout this Contract
11 period until such time as the WSF has accepted redelivery of the Vessel.
12 Every reasonable precaution shall be taken to protect the Vessel from the
13 hazards of fire, flooding, pilferage, malicious damage, and other events
14 including cataclysmic phenomena of nature.

15 D. Provide and maintain comprehensive and effective fire prevention and fire
16 detection, and fire fighting programs and systems sufficient to ensure the
17 safety and integrity of the Vessel. Provide personnel trained in shipboard fire
18 fighting techniques and also trained to cooperate with and assist local fire
19 fighting organizations. Provide sufficient shore fire lines to ensure an
20 adequate supply of fire fighting water, at sufficient pressure, and maintain an
21 adequate number of tested fire-hoses aboard the Vessel to effectively fight
22 fires at any location in the Vessel.

23 E. Provide and maintain portable fire extinguishers in sufficient quantity, and of
24 the appropriate type, to combat local fires of any class. Provide sufficient fire
25 watches, including roving watches as may be required, to ensure that fires that
26 may be inadvertently started by welding sparks or heat, electrical malfunction,
27 or spontaneous combustion are detected, reported and promptly extinguished.

1 **3. SEA VALVE INSPECTION**
2 {MAINTENANCE}

- 3 A. Open, or remove as required, the below listed sea valves; clean, blue and
4 inspect for proper water tightness (valve disk to valve seat contact), including
5 valve stems. All valves two inch (2") and under shall be replaced with new
6 Contractor furnished valves, the removed valves shall be left with the Vessel
7 Staff Chief Engineer.

8 **For the M.V. Quinault**

Qty	Service	Size	Type
2	Main Engine Sea Suction	5"	Angle
2	Main Engine Sea Water Overboard Valve	5"	Gate
2	Fire Pump Suction Valve	5"	Gate
2	Fire Pump Overboard	4"	Gate
1	Aux. Generator & Bilge Pump Sea Suction	4"	Gate
1	Sea Chest	1½"	Gate
2	Sea Chest	2"	Gate
5	Sea Chest	1½"	Globe
1	Aux. Generator OverBoard	2"	Globe
2	Stern Tube Cooling Water Valves	1"	Gate

- 9 B. Sea valves shall be inspected by the WSF and USCG Inspectors, and Vessel
10 Staff Chief Engineer for the following:
- 11 1) General material condition.
- 12 2) Valve disk to valve seat contact.
- 13 3) Proper mechanical operation.
- 14 C. Prior to installation, hydrostatically test all new and reconditioned valves to
15 the satisfaction of the WSF Inspector, USCG Inspector and Vessel Staff Chief
16 Engineer.
- 17 D. Provide three (3) written copies of the report of test, inspection, all repairs to
18 existing valves and all new valves installed to the WSF Inspector.
- 19 E. Inspect for water leakage prior to launching. Any leakage will be repaired at
20 the Contractors expense.

1 **4. ZINC RENEWAL**
2 **{MAINTENANCE}**

3 A. Remove and reinstall eight (8) each 1¼” x 6” x 12” new bolt-on zincs.

4 **5. RUDDER INSPECTION, NO. 1 AND NO. 2 ENDS**
5 **{MAINTENANCE}**

6 A. Erect staging or provide suitable lifting device on both sides of No. 1 and No.
7 2 End Rudders for inspection. Remove staging upon completion of all
8 affiliated work.

9 B. Take and record clearances of the rudder pintle and rudder stock bearings on
10 No. 1 and No. 2 End Rudders. Submit three (3) copies of a written report of
11 findings to the WSF Inspector within twenty-four (24) hours of drydocking
12 Vessel.

13 **6. PROPELLER INSPECTION, NO. 1 AND NO. 2 ENDS**
14 **{MAINTENANCE}**

15 A. Erect staging or provide suitable man lifting device on both sides of No. 1 and
16 No. 2 End Propeller for inspection. Remove staging upon completion of all
17 affiliated work.

18 B. Polish the No. 1 and No. 2 End Propellers by power disk sanding, using 80
19 grit or finer abrasive. Thoroughly clean propeller hub and blades for
20 nondestructive testing.

21 C. Inspect No. 1 and No. 2 End Propellers for damage and proper blade track.
22 Conduct a nondestructive test using Nondestructive Dye Test/Inspection, for
23 surface cracks and other defects on the blades in the presence of the Vessel
24 Staff Chief, WSF and USCG Inspectors. Submit three (3) copies of a written
25 report of findings to the WSF Inspector within twenty-four (24) hours of test
26 completion.

1 **7. REPLACE STERN TUBE BEARINGS**

2 {MAINTENANCE}

3 A. Erect staging or provide suitable man lifting device on both sides of No. 1 and
4 No. 2 End for inspection. Remove staging upon completion of all affiliated
5 work.

6 B. Remove and reinstall (when required) the No. 1 and No. 2 End Propellers,
7 Outer and Intermediate Propeller Shafts and Stern Tube Bearings, Inner and
8 outer seals, rope guards and all other components required to be removed in
9 order to remove and install the Stern Tube Bearing. Reinstall all items when
10 appropriate and in proper sequence.

11 C. Transport No. 1 and No. 2 End Stern Tube Bearing to and from Sound
12 Propeller facility. Sound Propeller will be replacing the Rubber components
13 of the bearings.

14 D. Clean and Conduct a Nondestructive Dye Penetrant test/Inspection of
15 Propeller Bores and Keyways, Propeller Shaft tapers, Shaft key ways,
16 Propeller Shaft nuts and Keys, the shafts coupling bolts and nuts, for surface
17 cracks and other defects in the presence of the WSF and USCG Inspectors,
18 and Vessel Staff Chief Engineer. Submit three (3) copies of a written report
19 of findings to the WSF Inspector within twenty-four (24) hours of test
20 completion.

21 E. Take stern seal wear-down readings on No. 1 and No. 2 Ends in the presence
22 of the WSF Inspector and Vessel Staff Chief Engineer. Wear down readings
23 are to be taken with a ten inch (10”) feeler gauge.

24 F. Submit three (3) copies of a written report of findings to the WSF Inspector
25 within twenty-four (24) hours of drydocking the Vessel.

26 G. Reinstall rope guard upon completion of all related work.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

(ATTACHMENT NO. 1)

Area Preparation, Surface Preparation, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries Marine Coating Specification 1/03 unless otherwise specified in the following Specifications.

1 **8. FRESHWATER WASH OF VESSEL HULL AND GUARD**

2 {MAINTENANCE}

- 3 A. Within twenty-four (24) hours of Drydocking Vessel, provide labor, material
4 and equipment to Low-Pressure Water Clean (LP WC) at 3,000 to 5,000 psi in
5 accordance with SSPC-SP 12/NACE 5. The wand shall be held no more than
6 twelve inches (12") from the surface being washed. Wash the entire Hull,
7 from the top of the guard to the keel, including flat keel, sea chests, strainer
8 plates, propellers, and rudders. The wash shall leave no visible growth or
9 residue after the hull dries from washing. Remove and replace the sea chest
10 strainer plates as necessary. Prior to reinstalling sea chest strainer plates, the
11 contractor shall conduct an inspection with WSF Inspector and the Vessel
12 Staff Chief Engineer.

13 **9. PREPARATION FOR EXTERIOR HULL BLASTING AND PAINTING**

14 {MAINTENANCE}

15 **NOTE:**

16 Care shall be taken to avoid damage to the "CAPAC" anodes and reference cell.

- 17 A. Install protective covering on propellers, shaft seals, propeller bearings,
18 exposed shafting, upper and lower rudder bearing areas, pintle pin bushing,
19 CAPAC anodes and reference cell, all through-hull penetrations, sea valves,
20 and entrance ways to protect and prevent grit blast material from causing
21 damage or entering Vessel. Prior to any grit blasting the Contractor shall
22 conduct a cover up inspection with the WSF Inspector and the Vessel Staff
23 Chief Engineer.

- 24 B. Upon completion of hull grit blasting and removal of cover up material,
25 conduct an inspection in the presence of the WSF Inspector and the Vessel
26 Staff Engineer.

27 **10. BLASTING OF THE GUARD AND ANTI-CORROSION COATING**

28 {MAINTENANCE}

29 **NOTE:**

30 For purposes of bidding assume that **200 Square Feet** of the Guard will require grit
31 blasting to SSPC-SP6, Commercial Blast Cleaning and Painting. Upon completion of
32 the grit blast, the Contract will be adjusted upward or downward to account for the
33 actual scope of grit blasting authorized by the WSF Inspector.

34 **NOTE:**

35 The Contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting
36 only if the hull profile is taken and is within the required profile in Attachment No. 1
37 and approved by the WSF Inspector.

- 1 A. Grit blast areas of abrasion and corrosion on the horizontal and vertical
2 surfaces (top, bottom, and side) of the guard, as authorized by the WSF
3 Inspector, to an SSPC-SP6, Commercial Blast Cleaning.
- 4 B. The coating, for at least two (2) inches bordering the blasted area, shall be
5 feathered to a smooth surface.
- 6 C. Apply one (1) coat of INTERNATIONAL Intertuf 262 Series epoxy, Red, to a
7 minimum of 5 mils (DFT) to all prepared surface areas repaired in this Item.
- 8 D. Apply one (1) coat of INTERNATIONAL Interguard 267, Buff, to a
9 minimum of 5 mils (DFT) of contrasting color to all surfaces painted in
10 paragraph "C" of this Work Item.

11 **11. PAINTING OF VESSEL GUARD, FULL COAT**
12 **{MAINTENANCE}**

- 13 A. Apply one (1) coat of INTERNATIONAL Intercare 755, Black, to a minimum
14 of 2 mils (DFT) to all surfaces of the Guard (top, bottom and side).

15 **12. BLASTING OF THE HULL BELOW THE GUARD AND**
16 **ANTI-CORROSION COATING**
17 **{MAINTENANCE}**

18 **NOTE:**

19 For purpose of bidding assume that **3,000 Square Feet** of hull below the guard will
20 require grit blasting to SSPC-SP6, Commercial Blast Cleaning and painting. Upon
21 completion of the grit blasting, the Contract will be adjusted upward or downward to
22 account for the actual scope of blasting authorized by the WSF Inspector.

23 **NOTE:**

24 The Contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting
25 only if the hull profile is taken and is within the required profile in **Attachment No. 1**
26 and approved by the WSF Inspector.

- 27 A. Blast areas of abrasion, corrosion, and steel repairs from bottom of guard to
28 the keel; including flat keel, sea chests, strainer plates and rudders, to an
29 SSPC-SP 6, Commercial Blast Cleaning, as authorized by the WSF Inspector.
- 30 B. The coating, for at least two inches (2") bordering the blasted area, shall be
31 feathered to a smooth surface.
- 32 C. Apply one (1) coat of INTERNATIONAL Intertuf 262 Series epoxy, Red, to a
33 minimum of 5 mils (DFT) to all prepared surface areas repaired in this Item.

- 1 D. Apply one (1) coat of INTERNATIONAL Interguard 267, Buff, to a
2 minimum of 5 mils (DFT) of contrasting color to all surfaces painted in
3 paragraph "C" of this Work Item.

4 **13. ANODE AREA CAPASTIC REPLACEMENT**
5 {MAINTENANCE}

6 **NOTE:**

7 For bidding purposes, assume that **25 Square Feet** of failed capastic will require
8 repair. The capastic shall be applied to a minimum thickness of 1/8 inch in the area
9 of the shield out from the faired in area around the anode. The capastic shall be
10 troweled so as to achieve a smooth overall surface.

- 11 A. Renew capastic around the CAPAC anodes using 'Capastic' epoxy troweling
12 compound made by ELECTROCATALYTIC, INC.

- 13 B. Build up a minimum of 22 mils DFT of epoxy Anti-Corrosion coating over
14 the capastic areas and the secondary dielectric shield areas.

15 **14. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING**
16 {MAINTENANCE}

17 **NOTE:**

18 For bidding purposes, assume that **2,000 Square Feet** of the hull will require the first
19 coat of ANTI-FOULING COATINGS. The Contract will be adjusted upward or
20 downward, using the square footage determined in Grit Blasting Hull Item.

- 21 A. Apply one (1) coat of INTERNATIONAL INTERSPEED ANTIFOULING,
22 BRA 640, Red, to a minimum of 4 mils (DFT) to all surfaces painted below
23 the waterline.

24 **15. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING**
25 **(FULL COAT)**
26 {MAINTENANCE}

- 27 A. Apply one (1) full coat of INTERNATIONAL INTERSPEED
28 ANTIFOULING, BRA 640 anti-fouling, Black, to a minimum of 6 mils
29 (DFT) to all surfaces of hull below the waterline.

30 **16. DRAFT MARKS**
31 {MAINTENANCE}

- 32 A. Repaint all draft marks and underwater hull markings, using
33 INTERNATIONAL Interlux Y5584, Shark White.

1 **17. PAINTING OF VESSEL HULL, ABOVE THE WATERLINE**
2 {MAINTENANCE}

3 **NOTE:**

4 For purpose of bidding assume that **1,000 Square Feet** of hull above the waterline
5 will require painting. The Contract will be adjusted upward or downward using the
6 square footage determined in Grit Blasting Hull Item.

7 A. Apply one (1) coat of INTERNATIONAL, Intercare 755, WSF Green, to a
8 minimum of 2 mils (DFT) to all surfaces prepared above waterline in Grit
9 Blast Hull Item.

10 B. Apply one (1) coat of INTERNATIONAL Intercare 755, Black, to a minimum
11 of 2 mils (DFT) to the entire guard.

12 **18. GAUGE VESSEL STEEL**
13 {MAINTENANCE}

14 A. Perform an ultrasonic survey of the Vessel's steel plating thickness in the
15 following locations: three (3) girth belts (including the auto deck), **girth belts**
16 **shall be at frame 24-26 both Ends, and No. 1 end, between 10-12 frames,**
17 20 shots per belt, 60 total shots; plates in the wind and water areas, port and
18 starboard sides, full length – 40 shots per side, 80 total shots; keel plating – 20
19 shots; Car Deck and Superstructure areas – 50 shots; suspect areas as directed
20 by the WSF Inspector and Vessel Staff Chief Engineer 200 shots. The survey
21 shall be performed in the presence of the WSF Inspectors. Estimate that Four
22 Hundred Ten (410) shots will be required.

23 B. The readings shall be taken from the exterior of the hull and deck when the
24 Vessel is in drydock by a qualified NDT Inspector within seventy-two (72)
25 hours of drydocking. The exact areas to be surveyed in Paragraph A of this
26 Item will be designated by the WSF Inspector. Provide personnel lift capable
27 of reaching all portions of the hull from the guard down to the keel. The
28 readings may be taken through the paint in areas where paint is smooth
29 enough if the equipment being used is capable of doing so. In areas disturbed
30 by this work, remove and restore paint as necessary, using the proper coating
31 as existing system.

32 C. Provide the WSF Inspector with three (3) copies of the report in tabular form,
33 identifying the locations of readings by location, original plate thickness,
34 audio gauge reading taken, and percent wastage. Attach a schematic showing
35 the locations shots were taken and thickness found.

1 **19. PRESSURE WASH TOPSIDE AND VEHICLE DECK AREAS**
2 {MAINTENANCE}

3 A. Low Pressure Fresh Water Clean (LP WC) the entire exterior of the Vessel
4 from the Vehicle Deck to the Top of the mast, at 3,000-5,000 PSI to achieve a
5 condition of SSPC-SP 12/NACE 5. The wand will be held no more than twelve inches
6 (12") from surface being washed. Use ZEP Formula 50 or equal when
7 washing, DO NOT use INTERNATIONAL, Prep 88 or INTERNATIONAL
8 GMA, since the intent is to do a spot coat preservation, and WSF does not
9 wish to etch paint in areas which will not be over coated. The area to be
10 washed is the entire exterior surface and exterior components of the Vessel.
11 These areas include the: Shelter deck areas; Vehicle deck areas; exterior
12 Curtain Plate and Passenger Cabin House Sides, Stairwells; all
13 Appurtenances; Masts, Stacks including Stack Tops; Pilot house and Pilot
14 House Tops; Crew Quarters and Crew Quarters House Tops; all External
15 Surfaces of the Passenger Decks, Vehicle Decks including the Exterior
16 Overheads, Bulkheads, Pockets which is opened to the weather in the Casings,
17 Decks, Stairwells and Shelter Areas; Rescue Boat Stations, Anchor handling
18 areas, all Deck Screens and stanchions, Deck Coamings. It is the intent of this
19 item to wash the entire exterior surface of the Vessel.
20

21 B. Clean all exterior windows upon completion of Water Wash. Glass to be
22 cleaned to remove all dirt, paint, water streaks and other foreign matter. Care
23 will be taken to prevent scratching of window surface.

24 **NOTE:**

The Contractor is advised to exercise care and caution to assure that all insulation, light fixtures, speakers cabling, alarms, signage, and appurtenances are protected and not damaged by the fresh water wash down.

25 **20. TOPSIDE PAINTING, PREPARATION AND SPOT COAT**
26 {MAINTENANCE}

27 **NOTE:**

For bidding purposes, assume that a total of **2,000 Square Feet**, in various areas will require SSPC-SP 3, Power Tool Cleaning and painting. Upon completion of the preparation, the Contract will be adjusted upward or downward to account for the actual square footage authorized by the WSF Inspector.

28 A. Prepare various areas throughout the Exterior of the Vessel to an SSPC-SP 3,
29 power tool cleaning. Ensure the profile requirements are obtained. These
30 areas will include Promenade Deck, Texas Deck, Vehicle Decks, and the
31 Outboard Curtain Plates and Overheads.

- 1 B. Apply one (1) coat of INTERNATIONAL Intertuf 262 Series epoxy, Red, to a
2 minimum of 5 mils (DFT) to all prepared surface areas in this Item.
- 3 C. Apply one (1) coat of INTERNATIONAL Interguard 262, Buff, to a
4 minimum of 5 mils (DFT) of contrasting color to all surfaces painted in this
5 Work Item.
- 6 D. Apply one (1) coat of INTERNATIONAL Intercare 755, to minimum of 2
7 mils (DFT), of proper color to the areas prepared in this Item.
- 8 E. Upon completion of the preparation and painting, the Contract will be
9 adjusted upward or downward to account for the actual area authorized by the
10 WSF Inspector.

11 **21. TOPSIDE PAINT, GREEN COAT**
12 {MAINTENANCE}

- 13 A. Hand wash all WSF Green painted surfaces on the Port and Starboard Curtain
14 Plate, No. 1 and No. 2 Pilothouse topside exterior's and Visor (Topside only),
15 using INTERNATIONAL GMA 571 OIL AND GREASE REMOVER in
16 accordance with the manufactures instructions, **do not allow GMA 571**
17 **cleaner to dry on any surfaces; also, clean up any spillage on unspecified**
18 **surfaces immediately.** Handrails, screens and stairways are not included in
19 this Item.

20 **NOTE:**

For bidding purposes, assume that **1,000 Square Feet** of existing Painted Green surfaces above the vehicle deck will require SSPC-SP3, Power Tool Cleaning, painting; and staging may be required for some areas. The Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

- 21 B. Prepare painted surfaces that are affected by this work above the vehicle deck,
22 as authorized by the WSF Inspector, to an SSPC-SP3, Power Tool Cleaning.
23 This includes Port and Starboard Exterior Curtain Plate's, No. 1 and No. 2
24 Pilothouse topside exterior's and Visor (Topside only) and the amidships
25 Exhaust Stacks and any other topside Green surfaces.
- 26 C. Areas prepared by this Item shall be coated with two (2) coats of
27 INTERNATIONAL Intertuf 262, to a minimum of 5 mils (DFT) each coat.
28 The back sides, corners and sharp edges of all angles, rat holes, weld seams,
29 scallops, and beams shall be hand-striped with a brush for the Intertuf 262
30 coating.
- 31 D. Apply one (1) coat of INTERNATIONAL Intercare 755, WSF Green, to a
32 minimum of 2 mils (DFT) to areas painted Green in this Item.

1 **22. REPLACE NO. 1 AND NO. 2 STEERING GEAR STRIPPING VALVES**
2 **{MAINTENANCE}**

- 3 A. Remove No. 1 End and No. 2 End shaft alley Stripping valves located at
4 frame 54, below the shaft; and, approximate four feet (4') of piping in each
5 shaft alley.
- 6 B. Contractor to supply new 1½" piping, fittings and stop/check valves of same
7 material and size.
- 8 C. Install new valve approximately three feet (3') higher (confirm with Vessel
9 Staff Chief Engineer for exact position), reason for shifting valve is to make
10 assessable and serviceable. Install new piping and adjust length to original
11 suction position. All new piping shall be galvanized.
- 12 D. Conduct a satisfactory leak test as required and witnessed by the WSF
13 Inspector and Vessel Staff Chief Engineer. After a successful/accepted leak
14 test, apply paint to all galvanized surfaces as stated in **Attachment No. 1**.
- 15 E. For non-galvanized surfaces, prepare all areas affected by this work to an
16 SSPC-SP3, Power Tool Cleaning. Apply two (2) coats of INTERNATIONAL
17 Intertuf 262 Series epoxy, of contrasting colors, to a minimum of 5 mils
18 (DFT), each coat, final coat to match surrounding area.

19 **23. INSERT VEHICLE DECK STEEL NO. 2 END**
20 **{MAINTENANCE}**

- 21 A. Clean and gas free and obtain a Marine Chemist certificate for "SAFE FOR
22 WORKERS" and "SAFE FOR HOT WORK" for all areas that require
23 Welding Certificates. Maintain the certification during the course of the work
24 required in this Item.
- 25 B. Remove wasted steel and replace with new steel of 12.75 lb. plate at
26 approximate location as marked on **Attachment No. 3, approximate size is**
27 **2' x 20'**.
- 28 C. Spot weld various areas on Vehicle deck as shown by the WSF Inspector, for
29 estimating purpose, approximately **50 square feet** will require spot welding.
30 The Contract will be adjusted upward or downward to account for the actual
31 area authorized by the WSF Inspector.
- 32 D. Remove and restore all interferences including any insulation disturbed by
33 this Item.
- 34 E. All welding will be approved by the WSF and USCG Inspectors.

- 1 F. Conduct a satisfactory test of welds, that is approved and witnessed by the
2 WSF and USCG Inspectors.
- 3 G. Prepare all new steel to an SSPC-SP10, Commercial Blast Cleaning, prior to
4 installing. Apply Interplate 997 (SW) Nippe-Cerramo pre-construction
5 primer.
- 6 H. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, to a
7 minimum of 5 mils (DFT) each coat, to all prepared surface areas in this item
8 that require painting.
- 9 I. Apply Ameron Non-skid 237M, to areas where non-skid was remove for this
10 item, of same color as surrounding non-skid.

11 **24. FRAME REPAIRS IN NO. 1 AND NO. 2 ENGINE ROOMS**

12 {MAINTENANCE}

13 **NOTE:**

14 Clean and gas free and obtain a Marine Chemist certificate for “SAFE FOR
15 WORKERS” and “SAFE FOR HOT WORK” for all areas that require Welding
16 Certificates. Maintain the certification during the course of the work required in this
17 Item.

- 18 A. Replace wasted steel as shown on **Attachment No. 4**, titled “Quinault No. 2
19 Engine Room” and **Attachment No. 5**, titled “Quinault No. 1 Engine Room”
20 with new steel of same size and grade.
- 21 B. Prepare all internal steel affected by this work to an SSPC3-SP3, Hand Tool
22 Preparation.
- 23 C. Internal and external apply one (2) coats of INTERNATIONAL Intertuf 262
24 Series epoxy, of contrasting colors, to a minimum of 5 mils (DFT), each coat,
25 to all prepared surface areas in this Item.
- 26 D. On external surfaces, apply anti-fouling in accordance with the hull
27 antifouling items “Spot Coat and Full Coat of Anti-fouling”

28 **25. STABILITY/INCLINE OF VESSEL**

29 {MAINTENANCE}

- 30 A. The Contractor shall prepare and submit a stability test procedure as outlined
31 in 46 CFR Part 170 to the US Coast Guard (USCG) Commanding Officer,
32 Marine Safety Center for approval a minimum of 4 weeks prior to the
33 anticipated test date.

- 1 B. Prepare for and conduct a stability test in general accordance with USCG
2 NVIC 17-91, Guidelines for Conducting Stability Tests and ASTM F 1321-
3 90, Standard Guide for Conducting a Stability Test (Lightship Survey and
4 Inclining Experiment) to Determine the Lightship Displacement and Centers
5 of Gravity of a Vessel.
- 6 1. The stability test (including the deadweight survey) shall conducted
7 prior to going into drydock and be witnessed by representatives of the
8 USCG and WSF.
- 9 2. The Contractor shall prepare the Stability Test Data Report using
10 General Hydrostatics (GHS) software, published by Creative Systems,
11 Port Townsend, Washington, and submit copies to the USCG and the
12 WSF Representative for approval. The Contractor shall include in this
13 submittal exact 3½ inch magnetic media files of both the report and
14 supporting data.
- 15 3. Submittal of the report to the USCG and WSF shall take place no later
16 than five (5) working days after the completion of the stability test.
- 17 4. Prepare and provide a Trim and Stability Booklet using the data
18 provided by the stability test. Submittal of the Trim and Stability
19 Booklet to the USCG and WSF shall take place no later than ten (10)
20 working days after the completion of the stability test.
- 21 5. Final Acceptance, as defined in Volume I, will not be executed until
22 submission of the USCG approved Stability Test Data Report and
23 Trim and Stability Booklet and the USCG has issued a Stability Letter
24 in accordance with 46CFR 170.120 (e).

25 **26. REPLACE FOUNDATIONS FOR MAIN ENGINE STRAINER PLATES**
26 {MAINTENANCE}

- 27 A. Clean and gas free and obtain a Marine Chemist certificate for “SAFE FOR
28 WORKERS” and “SAFE FOR HOT WORK” for all areas that require
29 Welding Certificates. Maintain the certification during the course of the work
30 required in this Item.
- 31 B. Remove and replace the existing Platform, Transverse Frame and legs.
32 Platform is approximate 18½” x 42” x ¼” thick Plate. Transverse Plate is
33 approximate 4’ long x 20” deep x ¼” thick; legs 4” angle’s, adjust length as
34 required.
- 35 C. Remove and reinstall strainer as require to perform this work.
- 36 D. Inspect and perform a non-destructive test to all welds as accepted and to the
37 satisfaction of the WSF Inspector and Vessel Staff Chief Engineer.

- 1 E. Prepare all new steel to an SSPC-SP10, Commercial Blast Cleaning, prior to
2 installing. Apply Interplate 997 (SW) Nippe-Cerramo pre-construction primer
3 to all surface area.
- 4 F. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, to a
5 minimum of 5 mils (DFT) each coat, to all prepared surface areas in this item
6 except for the vehicle deck area.
- 7 G. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
8 minimum of 2 mils (DFT) to hull and guard areas.

9 **27. PASSENGER DECK EXTERIOR BENCHES**
10 {MAINTENANCE}

- 11 A. Unbolt, remove, wash, blast, paint and reinstall the Port and Starboard
12 exterior bench seating of the passenger deck.
- 13 B. Hand wash all painted surfaces on the benches, using INTERNATIONAL
14 GMA 571 OIL AND GREASE REMOVER in accordance with the
15 manufactures instructions, **do not allow GMA 571 cleaner to dry on any**
16 **surfaces; also, clean up any spillage on unspecified surfaces immediately.**

17 **NOTE:**

For bidding purposes assume that **800 Square Feet** of benches will require SSPC-SP6, Commercial Blast Cleaning and painting. The Contract will be adjusted upward or downward to account for the actual area authorized by the WSF Inspector.

18 **NOTE:**

The contractor shall have the option to UHP-WJ4, Ultrahigh-Pressure Water Jetting only if profile is taken and is within the required profile in Attachment No. 1 and approved by the WSF Inspector.

- 19 C. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, of
20 contrasting colors, to a minimum of 5 mils (DFT), each coat, to all bare steel
21 surfaces areas in this Item.
- 22 D. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
23 minimum of 2 mils (DFT) to all surfaces of the benches.

1 **28. NO. 2 END STEERING QUADRANT REPAIR**
2 **{MAINTENANCE}**

3 A. Remove a section of the lower vehicle deck to gain access to the steering
4 quadrant and rod end pins. Remove the pins that lock the hydraulic arms to
5 the quadrant as required to perform this work. With removal of the deck
6 section over the quadrant, work on the quadrant may be accomplished in place
7 or removed from the Vessel. Remove all interferences and components as
8 required to accomplish this work.

9 B. If required, Clean and gas free and obtain a Marine Chemist certificate for
10 "SAFE FOR WORKERS" and "SAFE FOR HOT WORK" for all areas that
11 require Welding Certificates. Maintain the certification during the course of
12 the work required in this Item.

13 C. Fabricate and install stainless steel sleeves in the upper and lower arms of the
14 yoke, P/S. Sleeve material shall be ASTM A276, Grade 316.

15 D. Sleeves shall have an inside diameter of 3.000, 2.999 inches with a minimum
16 wall thickness of 1/2". Finished OD to suit final boring of the yoke for an
17 interference fit. Sleeves shall be approximately 2¼" long, (4 pieces).

18 **NOTE:**

 Lower arms of the yoke were previously sleeved.

19 E. To prevent possible spinning of the sleeves, provisions shall be provided to
20 secure the sleeve in the yoke.

21 F. Fabricate and install new stainless steel rod end pins (P/S) to match existing
22 pins, material shall be to ASTM A276, Grade 316. Pin diameter shall be
23 2.998, 2.997 inches.

24 G. Pins shall be approx 9½ inches long from the shoulder to end. Pins shall have
25 a 4" diameter by 1/2" thick head drilled and tapped for a 1-8UNC pulling bolt.
26 A segment of the pins' heads shall be machined to their fullest depth from the
27 outside diameter to within one inch (1") of the pins' center to facilitate
28 installation of the pins' keeper plate as presently installed.

29 H. Reinstall all components and interferences removed, all reinstall operational
30 items shall be inspected and tested as required to insure proper operations of
31 steering system to the satisfaction of the WSF Inspector, USCG Inspector and
32 Vessel Staff Chief Engineer.

33 I. Prepare all internal steel affected by this work to an SSPC3-SP3, Hand Tool
34 Preparation.

1 J. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, of
2 contrasting colors, to a minimum of 5 mils (DFT), each coat, to all bare steel
3 surfaces areas in this Item.

4 K. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
5 minimum of 2 mils (DFT) to all surfaces. Apply non-skid where required.

6 **29. REPAIR OVERHEAD CRACKS IN NO. 2 STEERING COMPARTMENT**
7 {MAINTENANCE}

8 A. Clean and gas free and obtain a Marine Chemist certificate for “SAFE FOR
9 WORKERS” and “SAFE FOR HOT WORK” for all areas that require
10 Welding Certificates. Maintain the certification during the course of the work
11 required in this Item.

12 B. Weld up approximately 10 crack in the existing skip welds in the No. 2 End
13 Steering Compartment. Welds are mostly on the overhead attaching frames to
14 vehicle deck plate.

15 C. Inspect and perform a non-destructive test to all welds as accepted and to the
16 satisfaction of the WSF Inspector and Vessel Staff Chief Engineer.

17 D. Prepare all internal steel affected by this work to an SSPC3-SP3, Hand Tool
18 Preparation.

19 E. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, of
20 contrasting colors, to a minimum of 5 mils (DFT), each coat, to all bare steel
21 surfaces areas in this Item.

22 F. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
23 minimum of 2 mils (DFT) to all surfaces of the benches.

24 **30. NO. 2 END BOW DAMAGE**
25 {MAINTENANCE}

26 A. Remove and replace Vehicle deck and Guard steel plate located at the No. 2
27 End towards the center of the bow. Replace area of damage and pitting on the
28 Vehicle deck steel approximately 12” X 12' toward the center next to the
29 guard. Replace the area of damage to the guard approximately 12” long X
30 18” width of the guard. Refer to **Attachment No. 3, Vehicle Deck Steel.**

31 **NOTE**

This area does not require welding to the hull.

32 B. Inspect and perform a non-destructive test to all welds as accepted and to the
33 satisfaction of the WSF Inspector and Vessel Staff Chief Engineer.

- 1 C. Prepare all new steel to an SSPC-SP10, Commercial Blast Cleaning, prior to
2 installing. Apply Interplate 997 (SW) Nippe-Cerramo pre-construction primer
3 to all surface area.
- 4 D. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, to a
5 minimum of 5 mils (DFT) each coat, to all prepared surface areas in this Item
6 except for the vehicle deck area.
- 7 E. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
8 minimum of 2 mils (DFT) to hull and guard areas.

9 **31. VEHICLE DECK CLAD WELDING**
10 {MAINTENANCE}

- 11 A. Clad weld various areas on Vehicle deck as shown by the WSF Inspector, for
12 estimating purpose, approximately **25 square feet** will require spot welding.
13 The Contract will be adjusted upward or downward to account for the actual
14 area authorized by the WSF Inspector.
- 15 B. Clean and gas free and obtain a Marine Chemist certificate for “SAFE FOR
16 WORKERS” and “SAFE FOR HOT WORK” for all areas that require
17 Welding Certificates. Maintain the certification during the course of the work
18 required in this Item.
- 19 C. Prepare all painted surfaces affected by this work to an SSPC3-SP3, Hand
20 Tool Preparation.
- 21 D. Apply two (2) coats of INTERNATIONAL Intertuf 262 Series epoxy, of
22 contrasting colors, to a minimum of 5 mils (DFT), each coat, to all required
23 painted surfaces in this Item.
- 24 E. Apply one (1) coat of INTERNATIONAL Intercare 755, of proper color, to a
25 minimum of 2 mils (DFT) to all surfaces.
- 26 F. Apply non-skid and dark gray Intercare to all non-skid areas affected by this
27 Item.

28
29
30 (END)